



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,803	07/10/2003	Matthew A. Shepherd	200309527-1	2295
22879	7590	01/04/2005	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400				HUFFMAN, JULIAN D
		ART UNIT		PAPER NUMBER
				2853

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AIC

Office Action Summary	Application No.	Applicant(s)
	10/616,803	SHEPHERD ET AL.
	Examiner	Art Unit
	Julian D. Huffman	2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1 and 3-23 is/are rejected.
- 7) Claim(s) 2 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 July 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/10/03.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION***Claim Objections***

1. Claims 1-8 and 13-23 are objected to because of the following informalities: Claims 1-8 and 13-23 use the language "non-uniform resolutions per raster in a contiguous block of rasters". The specification does not describe non-uniform resolutions per raster. It is suggested that the phrase "per raster" be omitted.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 5-13, 15, 17-19, 21 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Chikuma et al. (U.S. 6,729,710 B2).

With regards to claim 1, Chikuma et al. discloses a method for printing, comprising:

receiving a print job (column 10, lines 46-52); and
performing the print job, wherein performing the print job includes printing non-uniform resolutions per raster in a contiguous block of rasters (fig. 13b).

With regards to claim 3, Chikuma et al. discloses printing all rasters in the contiguous block of rasters during a first time period which is less than a second time period which would be used to print all rasters in the contiguous block at the same horizontal resolution (fig. 13b, since fewer drops are ejected, faster printing occurs).

With regards to claim 5, Chikuma et al. discloses a method for non-uniform resolution printing, comprising:

interpreting a print job instruction set (column 10, lines 30-34);
modifying the print job instruction set to print non-uniform resolutions per raster within a contiguous block of rasters (fig. 13b).

With regards to claims 6-8, Chikuma et al. discloses:
printing a first raster in a first pass at a first horizontal resolution and printing a second raster in a second pass at a second horizontal resolution;
printing a third raster in a third pass at a third horizontal resolution and printing a fourth raster in a fourth pass at a fourth horizontal resolution; and
wherein printing a third and fourth raster includes printing with the third and fourth horizontal resolutions which are different from the first and second horizontal resolutions (fig. 13b).

With regards to claims 9 and 10, Chikuma et al. discloses a computer readable medium (103) having a set of executable instructions for causing a device to perform a method, comprising:

interpreting the type of information contained in a print job for a region of a media, including resolution data and print mode settings (the printer must interpret this data to print an image);

adjusting the print job to facilitate printing a number of rasters in a contiguous block of rasters in less time than for printing the number of rasters using a single resolution for each raster pass (fig. 13b).

With regards to claims 11 and 12, adjusting the print job to facilitate printing a number of rasters includes printing a first raster at a first horizontal resolution and printing a second raster at a second horizontal resolution and printing at least two complete raster passes at different resolutions (fig. 13b).

With regards to claim 13, Chikuma et al. discloses an apparatus comprising:

a controller (100);

a printhead coupled to the controller (1);

a printhead driver operable to interface the instructions from the controller to the printhead, wherein the instructions includes instructions to cause the printhead to print at non-uniform resolutions per raster in a contiguous block of rasters (140, fig. 13b).

With regards to claim 15, the instructions include instructions to print a first raster at a first horizontal resolution and to print a second raster at a second horizontal resolution (fig. 13b).

With regards to claim 17, Chikuma et al. discloses a printing device comprising:

a printhead (1);

means for controlling the printhead to print non-uniform resolutions per raster in a contiguous block of rasters such that the printhead prints two complete raster passes at different horizontal resolutions (140, 100, 103, 101, fig. 13b) .

With regards to claim 18, the means includes a controller interfaced with printhead driver electronics to control the printhead (140).

With regards to claim 19, the means includes a set of computer executable instructions operable to cause the device to print a first raster at a first horizontal resolution and to print a second raster at a second horizontal resolution (ROM 103).

With regards to claim 21, Chikuma et al. discloses a printing device, comprising:

a printhead driver (140);

a carriage motor driver (150);

a media motor driver (160);

a processor (100);

a printhead (1);

wherein the printhead driver, the carriage motor driver, the media motor driver, the processor, and the printhead are coupled via interface electronics for moving the printhead and media and for firing individual nozzles of the printhead (fig. 3); and

wherein the printhead driver is operable to interface an instruction set from the processor to the printhead, wherein the instruction set includes instructions to cause the printhead to perform non-uniform resolutions per raster in a contiguous block of rasters (fig. 13b).

With regards to claim 22, Chikuma et al. discloses an imaging system, comprising:

a remote device (110) having an application operable to create a print job; and

a printing device operable to receive the print job from the remote device, wherein the printing device include:

a controller (100);

a printing driver (140) operable to interface an instruction set from the controller to the printhead, wherein the instructions includes instructions to cause the printhead to perform non-uniform resolutions per raster in a contiguous block of rasters (fig. 13b).

4. Claims 1, 4, 5-8 and 13-23 are rejected under 35 U.S.C. 102(a) as being anticipated by Shioya et al. (U.S. 6,491,372 B1).

With regards to claim 1, Shioya et al. discloses a method for printing comprising :

receiving a print job (column 9, lines 13-16); and

performing the print job, wherein performing the print job includes printing non-uniform resolutions per raster in a contiguous block of rasters (fig. 22, column 1, lines 30-45).

With regards to claim 4, printing non-uniform resolutions per raster in a contiguous block of rasters includes printing a non-integral average number of drops per pixel in the contiguous block of rasters (17 dots are printed in 8 pixels for an average of 2.125).

With regards to claim 5, Shioya et al. discloses a method for non-uniform resolution printing, comprising:

interpreting a print job instruction set; and

modifying the print job instruction set to print non-uniform resolutions per raster within a contiguous block of rasters (fig. 22, column 9, lines 16-23, modifies the number of passes).

With regards to claims 6-8, the method includes printing a first raster in a first pass at a first horizontal resolution and printing a second raster in a second pass at a second horizontal resolution and printing a third raster in a third pass at a third horizontal resolution and printing a fourth raster at a fourth pass at a fourth horizontal resolution, wherein the third and fourth horizontal resolutions are different from the first and second horizontal resolutions (fig. 22, next two rasters will also have dots printed with different resolutions depending on the print data).

With regards to claim 13, Shioya discloses an apparatus comprising:

a controller (100);

a printhead coupled to the controller (1);

a printhead driver operable to interface instruction from the controller to the printhead (110D), wherein the instruction include instructions to cause the printhead to print at non-uniform resolutions per raster in a contiguous block of rasters (fig. 22).

With regards to claim 14, the instructions include instructions to print at least two full passes in a single raster at different resolutions (fig. 22).

With regards to claim 15, the instructions includes instructions to print a first raster at a first horizontal resolution and to print a second raster at a second horizontal resolution (fig. 22).

With regards to claim 16, the instructions include instructions to print a non-integral average number of drops per pixel in the contiguous block of rasters (2.125).

With regards to claim 17, Shioya discloses a printing device comprising:

a printhead (1);

means for controlling the printhead to print non-uniform resolutions per raster in a contiguous block of rasters such that the printhead prints two complete raster passes at different horizontal resolutions (fig. 22, 100, 110D, 110, 110M, 100M, 200).

With regards to claim 18, the means includes a controller interfaced with printhead driver electronics to control the printhead (110D).

With regards to claim 19, the means includes a set of computer executable instructions operable to cause the device to print a first raster at a first horizontal resolution and to print a second raster at a second horizontal resolution (fig. 22).

With regards to claim 20, the instructions cause the device to print at least two complete passes of a single raster at different resolutions (fig. 22).

With regards to claim 21, Shioya et al. discloses a printing device comprising:

a printhead driver (110D);

a carriage motor driver (104D);

a media motor driver 102D);

a processor (100);

wherein the printhead driver, the carriage motor driver, the media motor driver, the processor and the printhead are coupled via interface electronics for moving the printhead and media, and for firing individual nozzles of the printhead (fig. 8); and

wherein the printhead driver is operable to interface an instruction set from the processor to the printhead, wherein the instructions includes instructions to cause the printhead to perform non-uniform resolutions per raster in a contiguous block of rasters (fig. 22).

With regards to claim 22, Shioya discloses an imaging device comprising: a remote device having an application operable to create a print job; and

a printing device operable to receive the print job from the remote device, wherein the printing device include:

a controller (100);

a printhead coupled to the controller (1);

a printhead driver operable to interface an instruction set from the controller to the printhead (110D), wherein the instructions includes instructions to cause the printhead to perform non-uniform resolutions per raster in a contiguous block of rasters (fig. 22).

With regards to claim 23, the instructions includes instructions to cause the printhead to print a non-integral average number of drops per pixel in the contiguous block of rasters (2.125).

Allowable Subject Matter

5. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571) 272-2147. The examiner can normally be reached on 9:30a.m.-6:00p.m. Monday-Friday.

Art Unit: 2853

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JH

December 22, 2004



Thinh Nguyen
Primary Examiner
Technology Center 2800